

t76\_rmod\_4 (TMM-  
LVTQU8Ms3vCwGZx1HjVxFVBvWsNfZo6s)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_vectsp\_2 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_rmod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_rmod\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_rmod\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\
& X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge (l1\_vectsp\_2 \\
& X1 X0))))))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X1))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X1))) \Rightarrow ((r1\_tarski X2 X3) \Rightarrow (m1\_rmod\_2 (k10\_rmod\_4 X0 X1 X2) X0 (k10\_rmod\_4 \\
& X0 X1 X3))))))
\end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge \\
& (l1\_vectsp\_2 X1 X0))))))) \Rightarrow (\forall X2.(m1\_rmod\_2 X2 X0 X1) \Rightarrow (\forall X3. \\
& (m1\_rmod\_2 X3 X0 X1) \Rightarrow (\forall X4.(m1\_rmod\_2 X4 X0 X1) \Rightarrow (((m1\_rmod\_2 \\
& X2 X0 X3) \wedge (m1\_rmod\_2 X2 X0 X4)) \Rightarrow (m1\_rmod\_2 X2 X0 (k2\_rmod\_3 X0 X1 \\
& X3 X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski (k3\_xboole\_0 X0 X1) X0 \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (k9\_subset\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (m1\_subset\_1 (k9\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 \\
& X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& (((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge \\
& (v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge (l1\_vectsp\_2 \\
& X1 X0)))))) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X1)))) \Rightarrow \\
& ((v2\_vectsp\_2 (k10\_rmod\_4 X0 X1 X2) X0) \wedge (m1\_rmod\_2 (k10\_rmod\_4 \\
& X0 X1 X2) X0 X1))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \tag{7}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\ & v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge (l1\_vectsp\_2 \\ & X1 X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X1))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X1))) \Rightarrow (m1\_rmod\_2 (k10\_rmod\_4 X0 X1 (k9\_subset\_1 (u1\_struct\_0 \\ & X1) X2 X3)) X0 (k2\_rmod\_3 X0 X1 (k10\_rmod\_4 X0 X1 X2) (k10\_rmod\_4 X0 \\ & X1 X3)))))) \end{aligned}$$